

Bell Work

① Simplify

$$\left(\frac{x^3 y^5}{z^6}\right)^2 \cdot \left(\frac{x^4 y}{z^2}\right)$$

$$\left(\frac{z^6}{x^3 y^5}\right)^2 \cdot \left(\frac{x^4 y}{z^2}\right) = \frac{z^{12}}{x^6 y^{10}} \cdot \frac{x^4 y}{z^2}$$

$$\frac{z^{10}}{x^2 y^9}$$

Find $f(g(x))$

If $f(x) = x^2 + 2x$
 $g(x) = 5x + 3$

$$f(5x+3)$$

$$\begin{aligned} & \downarrow \quad \searrow \\ & (5x+3)^2 + 2(5x+3) \\ & (5x+3)(5x+3) + 2(5x+3) \\ & 25x^2 + 15x + 15x + 9 + 10x + 6 \\ & 25x^2 + 40x + 15 \end{aligned}$$

In order to draw a box-and-whisker plot, you need to first find the following:

Range: highest minus lowest

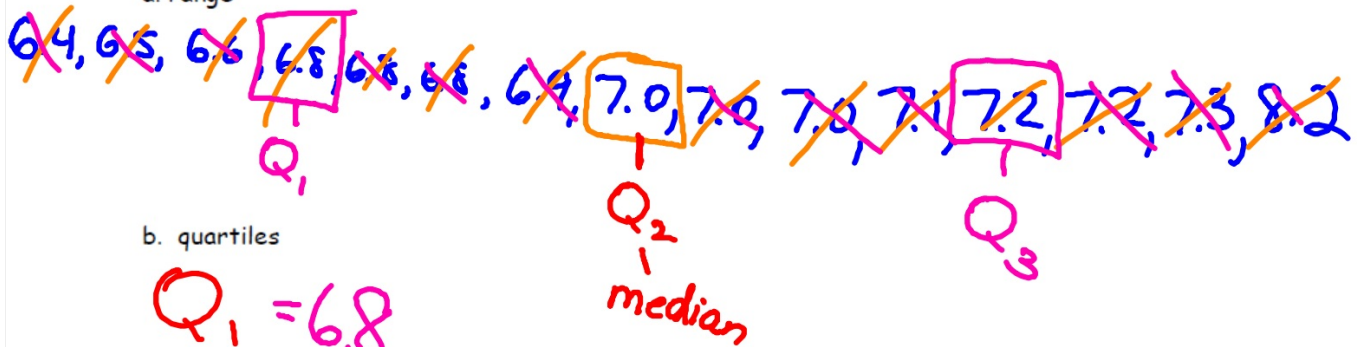
Quartiles: divide data into 4 equal regions

Interquartile Range: $Q_3 - Q_1 = IQR$

Example 1: Earthquake intensities are measured on the Richter scale. For the earthquake intensities listed below find the following:

7.2	6.8	8.2	6.8	6.8	7.0	6.5	7.2	7.0
7.3	6.9	7.1	6.4	7.0	6.6			

a. range



b. quartiles

$$Q_1 = 6.8$$

$$Q_2 = 7.0$$

$$Q_3 = 7.2$$

c. interquartile range

$$IQR = 7.2 - 6.8 = 0.4$$

You try: Find the range, quartiles, and interquartile range for each set of data.

1.) ~~75, 90, 53, 85, 75, 83, 73, 80, 46, 89, 91, 93, 85, 95, 68, 88, 97, 70,~~

~~46, 53, 68, 70, 73, 75, 75, 80, 83, 85, 85, 88, 89, 90, 91, 93, 95, 97~~

Q_1

84

Q_3

range: 51 (97-46)

Q_2

Q_1 : 73

Q_2 : 84

Q_3 : 90

interquartile range: 17 (90-73)

You try: Find the range, quartiles, and interquartile range for each set of data.

2.) 82, 65, 11, 31, 50, 95, 33, 88, 79, 10, 15, 45, 51, 66, 53, ~~68~~
10, 11, 15, 31, 33, 45, 50, 51, 53, 65, 66, 68, 79, 82, 88, 95

32
Q₁

52
Q₂

73.5
Q₃

range: 85

Q₁: 32

Q₂: 52

Q₃: 73.5

interquartile range: 41.5

Example 2: Use the data from Example 1 to create a box-and-whisker plot.

Minimum: _____

Maximum: _____

Q_1 : _____

Q_2 : _____

Q_3 : _____

.

Create box-and-whisker plots for the problems under the "You try" of your notes:

- 1.) Minimum: _____
Maximum: _____
 Q_1 : _____
 Q_2 : _____
 Q_3 : _____



2.) Minimum: _____
Maximum: _____
 Q_1 : _____
 Q_2 : _____
 Q_3 : _____